

Remarks

I wish to thank the Examiner for the courtesy in the interview of December 3, 2004. The above amendments to the claims are an honest attempt to implement the agreement reached in that interview.

Claims 1 – 4, 9 – 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Melink et al. In view of the amendments to claims 1, 3 – 4, 9, 14 and 16, I request withdrawal of this rejection because Melink et al. is deficient in teaching the claims as now presented. In particular, independent claim 1 now calls for **an embedded control algorithm which examines the composite output of discrete air quality sensors, as well as, the trend information and determines from the information an instantaneous ventilation requirement, and a control signal, derived from said algorithm to regulate the fan speed level such that every combination of discrete air quality sensor conditions will have a unique associated fan speed level based on said ventilation requirement.** I submit that this structure is not found in Melink et al. *which does not combine the air quality inputs, but rather responds to each input individually*, and thus, claim 1 and all claims dependent thereon should be allowed. In addition, claim 3 recites the structure that produces an audible alarm under the condition that **if despite the highest degree of airflow deployed in response to a hazard condition, the detected contaminant presence remains at a hazardous level for longer than a predetermined period of time.** Here too, I submit that this structure is not found in Melink et al. and is, therefore, allowable thereover.

As amended, claim 9 now calls for a **micro-controller that is adapted to examine the composite output of air quality sensors, as well as, the trend information arising from them, and determine from that information, an instantaneous ventilation requirement; and**
a control signal, produced by said micro-controller to regulate the fan speed such that every combination of air quality sensor levels will have a unique associated fan speed based on the ventilation requirement. *This distinction gives the claimed invention a distinct advantage over devices such shown by Melink et al. of being able to provide a unique fan speed for every combination of air quality sensor levels based on the composite output and the trend information arising from air quality sensors, rather than simply responding instantaneously to the sensors one at a time.* Thus, I submit that this claim too and its dependent claims should be allowed since the structure claims is not shown by Melink et. al.

Additionally, independent claim 14, as amended, is not shown or contemplated by Melink et al. since the claim calls for a controller adapted to integrate signals from a series of sensors, **as well as, the trend information arising from them, and determine from that information, an instantaneous ventilation requirement, and a control signal, produced by said controller to regulate the fan speed such that every combination of air quality sensor levels will have a unique associated fan speed based on the ventilation requirement.** Where is this structure in Melink et al.? I submit that it is not to be found and, thus, the distinction and advantage of claim 14 and its dependent claim over the prior art should be allowed.

Also, claim 16 calls for an audible alarm to be activated if, **despite the highest degree of airflow deployed in response to a hazard condition, a detected contaminant presence remains at a hazardous level for longer than a predetermined period of time.** This structure too is not shown by Melink et al. and claim 16 should be allowed thereover.

Claims 5 – 8 and 17 are rejected under 35 U.S.C. 103(a) as unpatentable over Melink et al. in view of Has. I request withdrawal of this rejection in view of the distinctions and advantages now included in the claims. For example, dependent claim 5 and its dependent claims 6 – 8 are believed patentable for the reasons advanced hereinabove in support of the allowability of independent claim 1. In addition, claim 5 now calls for a controller that uses a fuzzy logic control algorithm that provides the appropriate fan motor speed based on a computed ventilation requirement **such that the air quality outputs from a sensor are mapped into linguistic labels by means of membership functions that can in turn be used with experiential rules of the form: IF Smoke is MEDIUM and CO is LOW, THEN Fan speed should be MEDIUM; and such that two different input conditions such as Temperature is HOT and Temperature is WARM can be true to different degrees depending on the actual temperature and the way that the membership functions that map the inputs to the labels are drawn; and such that the resulting action prescribed by the controller would be a weighted average that reflects the degree to which each of the input conditions are true.** While it is true in the most general sense, that Has uses a fuzzy logic control algorithm, his is used to control a temperature level in an oven whereas Applicant uses it in the specific way described above to control the fan speed in a ventilation device. In view of this structure not being disclosed in either Melink et al. or Has, withdrawal of the rejection and allowance of claims 5 – 8 is requested. With respect to claim 17, it now calls for **the air quality sensor outputs to be mapped into linguistic labels by means of membership functions that can in turn be used with experiential rules of the form: IF Smoke is MEDIUM and CO is LOW, THEN Fan speed should be MEDIUM; and such that two different input conditions such as Temperature is HOT and Temperature is WARM can be true to different degrees depending on the actual temperature and the way that the membership functions that map the inputs to the labels are drawn; and such that the resulting action prescribed by**

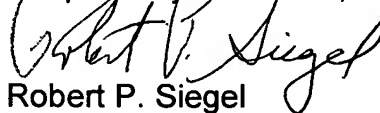
the controller would be a weighted average that reflects the degree to which each of the input conditions are true. This claim should be patentable because none of this uniqueness is shown or contemplated by Melink et al. or Has.

In summary, I submit that the claims as now constituted are patentable over all of the prior art of record and an early notice to the effect is earnestly solicited.

The citing of the references C-F is hereby acknowledged and Applicant agrees with the Examiner in that while they are pertinent to the present invention, they in no way anticipate or make the subject invention of this amendment as claimed obvious.

A telephone interview is respectfully requested at the number listed below prior to any further Office Action, i.e., if the Examiner has any remaining questions or issues to address after this paper. The undersigned will be happy to discuss any further Examiner-proposed amendments as may be appropriate.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert P. Siegel", is written over the printed name.

Robert P. Siegel

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